late in the afternoon, it is most unlikely that any precipitation will occur at night as a result of the lifting tendency, since the atmospheric moisture has been greatly reduced. This is evidenced by the high 3 p. m. totals on the sums for June, July, and August, the season when thunderstorms are most frequent and the lower totals at 10 p. m. when the lifting process should be active. On the other hand, if the time for the convective rains passes, without precipitation and the air is moisture laden, the lifting tendency is almost certain to produce precipitation as soon as the cool air sinks to the valley and lifts the moist air.

The totals for autumn, winter, and spring show slightly increased values at 10 p. m., when the lifting process is active, over the values late in the afternoon when convection is predominant.

The minimum at 12 noon is the result of increased capacity of air for moisture caused by diurnal warming, and occurs before convection begins to produce precipitation. The primary minimum in the tables for the year at 8 p. m. represents a lull between the average time of greatest convection and the average time of greatest lifting effect in producing precipitation. It can not be attributed directly to any physical process, but rather to the absence of any physical causes of precipitation. That this minimum should occur between the primary and secondary maxima is striking, especially when the maxima are only five hours apart. The rapid rises to both maxima and the rapid returns to both minima are indicative of the sudden effectiveness of convection and of the lifting effect in causing precipitation and of relieving the air of available moisture. An inspection of curves drawn from values in the tables leads to the conclusion that it requires about two hours for the lifting process to become effective here.

An added proof that lifting of warm air as described above is an important physical process in producing precipitation is found in the monthly and annual totals of precipitation at cooperative stations located on the southern edge of the Ozark Plateau.[3] These stations show increased values at points where this process is first operative.

The hourly occurrences of precipitation (Table 3), regardless of amount, show a maximum at 8 a. m. and a minimum at 1 a. m. The lack of eye observations at night may play a small part in causing the minimum at night, but that is not the only cause. The season with the largest number of hours with precipitation, winter, is also the season with the least amount of precipitation as shown by the hourly totals. It proves that the processes at work during the warm season are more effective in producing rainfall than the processes active during the cold season are.

[3] Climatological Data for United States by sections, secs. 47 and 48, 1917 Ed.

THE WEATHER OF 1925 IN THE UNITED STATES

By ALFRED J. HENRY

Temperature.—As a whole, the year must be classed as a warm one, thus completing a series of five consecutive warm years beginning with 1921. February, March, and April, 1925, were warm, from 3 to 5 degrees above the average; no abnormally cool weather occurred until October, that month being unusually cool in the Missouri and upper Mississippi Valleys and in parts of the Plains States. October was also characterized by the occurrence of rather early and heavy snow in the northern Rocky Mountain region. December was warm until the close of the month, when a cold spell reached the Gulf region.

The geographic distribution of the temperature abnormality is shown in Figure 1, and the monthly departure from the normal for geographic districts is presented in Table 1.

TABLE 1.—*Temperature departures, 1925*

District	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct	Nov.	Dec.	Average monthly departure
New England	−2.7	+7.5	+5.7	+1.9	−1.0	+2.9	−1.1	+0.3	−0.3	−5.7	+0.4	+0.2	+0.6
Middle Atlantic	−0.9	+7.2	+4.1	+2.7	−3.0	+4.4	−0.3	−0.9	+3.3	−3.5	−0.9	−0.1	+0.8
South Atlantic	+0.6	+5.2	+2.8	+2.9	−2.3	+2.5	+1.8	+0.6	+7.0	−0.4	−1.9	−1.4	+1.4
Florida peninsula	+5.4	+1.2	+0.1	−0.3	−1.4	+0.2	+0.4	+0.4	+1.4	+2.3	+0.4	+0.1	+0.8
East Gulf	+1.6	+3.9	+2.3	+4.3	−1.3	+2.2	+0.9	+1.1	+7.9	+0.1	−1.4	−2.5	+1.6
West Gulf	−1.1	+5.9	+3.8	+5.0	0.0	+3.3	+1.6	+1.0	+4.0	−2.6	−0.5	−4.0	+1.4
Ohio Valley and Tennessee	+0.7	+6.5	+3.1	+4.9	−4.2	+3.7	−0.2	+0.8	+7.2	−6.3	−1.4	−2.9	+1.0
Lower Lakes	−2.9	+6.7	+4.4	+3.0	−4.8	+2.7	−2.1	+0.5	+1.8	−8.3	−0.8	−1.7	−0.1
Upper Lakes	−0.6	+4.0	+3.0	+4.5	−3.2	+1.8	−1.3	+2.3	+2.1	−8.7	−1.1	−2.6	0.0
North Dakota	+5.0	+8.7	+6.3	+8.0	0.0	−0.9	−1.3	+2.7	+1.0	−9.6	+2.5	+4.3	+2.2
Upper Mississippi Valley	+1.4	+6.1	+4.8	+6.8	−3.2	+1.7	−0.6	+1.1	+5.3	−10.2	−1.0	−3.7	+0.7
Missouri Valley	0.0	+7.4	+6.1	+7.6	−1.4	+2.1	+0.5	+2.1	+4.6	−10.4	+1.0	−0.3	+1.6
Northern slope	+3.3	+10.1	+4.5	+4.4	+2.1	+0.6	+2.0	+0.1	0.0	−8.8	+1.2	+4.5	+2.0
Middle slope	−2.1	+7.5	+5.7	+5.8	+1.0	+4.4	+1.5	−0.1	+2.4	−8.4	+0.2	+0.4	+1.5
Southern slope	−1.9	+6.6	+5.0	+5.1	0.0	+2.5	+1.4	−1.2	+0.2	−4.3	−0.4	−2.8	+0.8
Southern plateau	−1.1	+3.6	+3.3	+3.0	+3.6	+0.5	+1.5	−1.4	−0.4	−0.7	−1.1	−1.1	+0.8
Middle plateau	−1.2	+5.4	+2.0	+2.2	+5.1	−0.2	+3.0	−2.1	−1.8	−0.7	−0.6	+3.0	+1.2
Northern plateau	+4.7	+8.3	+2.2	+3.0	+3.9	+2.1	+5.1	0.0	+0.5	−1.0	−0.3	+4.1	+2.7
North Pacific coast region	+3.1	+3.9	+0.6	+1.8	+3.3	+0.9	+1.7	−0.1	+1.2	+0.7	+0.8	+3.4	+1.8
Middle Pacific coast region	+0.8	+2.7	+0.7	+0.8	+1.0	+1.5	+1.6	−0.6	−0.9	+0.5	−0.3	+1.3	+0.8
South Pacific coast region	+1.8	+2.6	+0.9	+0.5	+1.4	+0.9	+2.2	−1.0	−1.2	−0.4	+0.8	+3.9	+1.0
United States	+0.7	+5.8	+3.4	+3.7	−0.2	+1.8	+0.9	+0.3	+2.2	−4.2	−0.2	+0.1	+1.2

Precipitation.—Precipitation was deficient in the great majority of districts; it was most pronounced in the north Pacific States, the Atlantic States south of Virginia, also in the Gulf region. There was more than the normal precipitation in the region stretching from southern Utah and southern Nevada northeastward to the Canadian border. Smaller areas of more than the average rainfall may be found in various parts of the country—Figure 2 and Table 2.

TABLE 2.—*Precipitation departures, 1925*

District	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Accumulated departure for the year
New England	−0.2	−1.1	+0.1	−1.1	−1.1	+0.3	+0.4	−2.0	−0.2	+0.8	−0.4	−0.6	−5.1
Middle Atlantic	+1.0	−1.7	−1.3	−0.6	−1.5	−1.1	+1.1	−2.2	−1.3	+0.6	−0.2	−0.9	−8.1
South Atlantic	+2.8	−1.9	−2.4	−1.2	−1.1	−1.7	−3.2	−3.0	−2.6	−0.7	−0.2	+0.2	−15.0
Florida peninsula	+1.4	−0.8	−0.9	+0.4	+5.8	−2.0	0.0	+1.9	−3.9	−3.4	+6.0	+0.6	+5.1
East Gulf	+3.6	−2.1	−3.4	−2.7	−0.5	−1.6	+0.9	−3.3	−2.0	+3.0	+1.3	−0.8	−7.6
West Gulf	−1.1	−1.7	−2.2	−1.8	−1.9	−1.1	−0.9	−1.6	+1.3	+3.8	+1.0	−1.3	−7.5
Ohio Valley and Tennessee	−1.4	−0.9	−1.9	−1.4	−1.6	−1.2	−0.1	−1.6	+0.4	+3.8	+0.9	−2.2	−7.2
Lower Lakes	−0.5	+0.2	+0.4	−0.5	−1.5	−0.7	+0.6	−1.2	+2.3	+0.7	+0.3	−0.9	−0.8
Upper Lakes	−1.2	−0.4	−1.0	−0.7	−2.2	−0.7	−0.1	−1.1	+0.5	−0.1	−0.7	−0.6	−8.3
North Dakota	−0.4	−0.1	−0.2	−0.3	−0.8	+1.6	−1.1	−1.4	+1.8	−0.4	−0.3	−0.2	−1.8
Upper Mississippi Valley	−1.3	−0.3	−1.1	−0.9	−2.8	+1.6	+0.1	−0.5	+1.8	+0.6	−0.2	−0.4	−3.4
Missouri Valley	−0.3	−0.3	−1.0	0.0	−2.3	+1.1	−1.6	−1.6	+1.0	+0.2	−0.1	−0.2	−5.1
Northern slope	−0.4	−0.3	−0.4	0.0	−0.6	+0.3	−0.2	+0.2	+0.7	+0.7	−0.3	0.0	−0.3
Middle slope	−0.3	−0.5	−0.8	0.0	−2.0	−0.7	+0.1	0.0	+1.3	0.0	+0.5	−0.3	−2.7
Southern slope	−0.4	−0.8	−0.8	+0.2	+1.2	−1.3	+0.7	−0.4	+1.3	+0.3	−0.5	−0.6	−1.1
Southern plateau	−0.6	−0.6	−0.2	−0.1	+0.1	−0.2	−0.3	−0.2	0.0	+0.6	−0.3	−0.1	−1.9
Middle plateau	−0.7	0.0	−0.1	+0.1	−0.2	+0.8	+0.8	+0.7	+0.5	+0.7	−0.1	−0.3	+2.2
Northern plateau	−0.2	−0.4	−0.8	−0.1	0.0	+0.1	+0.3	+0.3	+0.2	−0.5	−0.5	−0.4	−2.0
North Pacific coast region	−0.1	+0.5	−1.9	−0.1	−0.7	−0.9	−0.5	+0.4	−1.0	−2.9	−1.9	−0.4	−9.5
Middle Pacific coast region	−2.8	+2.1	−1.8	+0.8	+1.2	−0.1	0.0	+0.1	+0.4	−1.0	−1.1	−2.2	−4.4
South Pacific coast region	−1.8	−0.8	−0.3	+0.8	+0.7	+0.1	0.0	0.0	−0.2	+0.8	−0.7	0.0	−1.4
United States	−0.2	−0.6	−1.0	−0.4	−0.6	−0.4	−0.1	−0.8	+0.1	+0.4	+0.1	−0.6	−4.1

TROPICAL CYCLONES DURING 1925

By W. P. DAY

Only three tropical disturbances which might be classed as hurricanes were observed in the Caribbean Sea, the Gulf of Mexico, and the adjacent waters of the Atlantic. At the same time four important storms were experienced on the Pacific south of Mexico, and several other individual reports of gales were received from vessels in that region and south of Central America.

On the 3d of June a tropical disturbance was experienced in the Pacific south of the Gulf of Tehuantepec. It moved slowly northwestward during the next three days, striking the Mexican coast west of Salina Cruz on the 7th. It was apparently only of moderate intensity.

At 2 a. m. on July 10, the S. S. *San Tiburcio* in the Pacific near latitude 15° N. and longitude 112° W. encountered a severe hurricane, the barometer reading as low as 28.90 inches.

The S. S. *Antinous* at 2.30 a. m. of August 20 in latitude 34° 38′ N. and 63° 05′ W. passed near the center of a small hurricane. The lowest reading of the barometer was 29.34 inches and the highest wind was force 12 (Beaufort). This storm began to form in the remnants of a low-pressure trough on the 18th, about half-way between Bermuda and the Florida Peninsula, moved thence slowly northeastward and apparently reached its greatest intensity while in the vicinity of the S. S. *Antinous*. It merged with a more extensive disturbance to the north, but could still be identified on the morning of the 21st near latitude 41° N. and longitude 52° W.

On the 5th of September the S. S. *Baja California* in the southwestern Gulf of Mexico experienced a storm with winds shifting from north through east to southeast. The storm moved rapidly northwest to the mouth of the Rio Grande by the evening of the 6th, and caused heavy rains and moderate gales over the lower Rio Grande valley. Again, from the 12th to the 16th of September a tropical disturbance of considerable intensity moved west-northwest along the southern Mexican coast, causing gales from the Gulf of Tehuantepec to Cape Corrientes.

During October the only important tropical disturbance was a hurricane apparently of considerable intensity, which developed off the southern Mexican coast about the 22d and passed inland near Cape Correintes on the 25th.

The only important hurricane affecting the United States took form in the northwestern Caribbean Sea on November 29, crossed the Florida Peninsula and extreme eastern North Carolina, turned eastward across the Atlantic and was last noted on the 9th of December after passing the Azores. The lowest barometer reading reported in this storm was 28.90 inches, by the U.S.S. *Patoka*, near the North Carolina coast on the 2d of December. A complete account of this hurricane will be found under the heading, "Storms and Weather Warnings," in this issue of the REVIEW. The appearance of a true hurricane so late in the season is of particular interest.

NOTES, ABSTRACTS, AND REVIEWS

"THE CLIMATES OF THE UNITED STATES"

The publication by Ginn and Co. of Ward's "The Climates of the United States" was the outstanding climatological event in this country in 1925. Those who have had the privilege of receiving instruction from its author will recognize in the book the same qualities which make his teaching of climatology incomparable. Clarity of thought, directness and restraint of statement, inevitably march together through its pages. Consequently it is about as invulnerable to criticism as a book could be. Yet there are certain phases of it which will or will not, according to the reader's temperament, engender the wish that they might have been different.

Ward paints his climatic pictures in broad strokes. The wisdom of this can not be doubted. But in such procedure lies the danger that generalization of statement may at rare interv ls sli over the line and become weakness of statement, the danger that the student will be left with an impression that the book fails in

XIV. Annual Temperature Departures (°F.) in the United States, 1925

December, 1925. M. W. R.

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XV. Annual Precipitation Departures (inches) in the United States, 1925